



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,468	05/29/2001	Hisao Yasuhara	109375	3731

25944 7590 05/30/2003

OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER
----------

CANTELMO, GREGG

ART UNIT	PAPER NUMBER
----------	--------------

1745

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/865,468

Applicant(s)

YASUHARA ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 and 16 is/are allowed.
- 6) ☒ Claim(s) 13, 14 and 17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1745

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the amendment received March 4, 2003:
  - a. The drawing objection has been withdrawn in light of the amendment;
  - b. The rejection of claims 13 and 14 stand;
  - c. The prior art rejections of claims 15-17 have been withdrawn in light of the amendment.

### ***Election/Restrictions***

2. This application contains claims 1-12 drawn to an invention nonelected with traverse in Paper No. 5. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 61284573 A (JP '573).

JP '573 discloses an apparatus comprising: a cathode 1 for holding a sample 4, anodes 5 arranged to counter the cathode 1, a chamber (inherent) wherein the anodes 5, cathode 1 and sample 4 (which is ferromagnetic and thus metallic) are located under an inert gas atmosphere, a cooling device for cooling the anodes, in particular water cooling (abstract and Fig. 3 as applied to claim 13).

A plurality of anodes 5 are arranged to counter the cathode 1 and the anodes are water-cooled and thus are cooled by the cooling device (abstract and Fig. 3 as applied to claim 14).

Note that certain descriptive terms in claims 13 and 14 have not been accorded patentable weight. The term pretreatment does not further define any structure to the apparatus or to the chamber. With respect to the preamble, the intended use, for element analysis of a metal sample does not further define any structure to the apparatus and is not accorded patentable weight.

Also with respect to the term "counter", the Examiner has interpreted this in terms of opposing polarity of the cathode and anodes and not to a particular positional relationship of the cathode and anodes. Thus the opposing charges of these electrodes "counter" each other.

### ***Response to Arguments***

Art Unit: 1745

5. Applicant's arguments filed March 4, 2003 have been fully considered but they are not persuasive.

Applicant argues that JP '573 does not disclose a cathode for holding a metal sample.

While intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Art Unit: 1745

Applicant has not convinced the Examiner that the prior art apparatus of JP '573 differs in structure with respect to the claimed invention. The Examiner maintains that JP '573 teaches each of the feature of the apparatus of claims 13 and 14 and therefore anticipates the claimed invention.

Applicant further argues that fails to disclose a sputtering process.

Again as stated above, the manner of operating the device does not differentiate an apparatus claim from the prior art.

Furthermore while the abstract may not explicitly recite the phrase "sputtering" the prior art is held to be drawn to such a field. A plasma is generated in a chamber having a cathode, anode and targets. Given the arrangements shown in Figs. 1-3 a cathodic potential applied to the cathode 1 in the presence of a plasma will cause plasma ions to be attracted to the targets disposed on, and in electrical connection to the cathode thereby sputtering the targets of JP '573.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-316220 A (JP '220) in view of U.S. patent No. 4,845,041 (Scuitto).

Art Unit: 1745

JP '220 discloses a pretreatment apparatus comprising: a cathode 2 for holding a metal sample, anodes 5 (top and bottom of the chamber 4) arranged to counter cathode 2, a pretreatment chamber 4 having means for removing contaminants on the surface of the metal sample by sputtering, a reaction chamber 15 connected to the pretreatment chamber having means for heating the metal sample and means for detecting trace elements given off by the heated metal sample (Fig. 1 as applied to claim 17).

The difference between claim 17 and JP '220 is that JP '220 does not disclose of means for cooling at least one electrode for sputtering.

Scuitto discloses of using a cooled cathode (electrode) in an atomic absorption sputtering chamber (Fig. 16).

The motivation for cooling at least one electrode for sputtering is that it draws off heat from the electrode during sputtering.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '220 by cooling at least one electrode for sputtering since it would have drawn off heat from the electrode during sputtering.

***Allowable Subject Matter***

8. Claims 15-16 are allowed.
9. The following is an examiner's statement of reasons for allowance: none of the prior art of record are considered to teach, suggest or render obvious the invention of claims 15 and 16.

Art Unit: 1745

In particular while JP '220 teaches of a similar apparatus, JP '220 fails to teach or suggest: an anode for holding a metal sample (JP '220 uses the cathode for holding the metal sample), cathodes arranged to counter the anode (the anodic chamber counters the central cathode of JP '220), of the pretreatment chamber storing the anode, cathodes and metal sample (the chamber of JP '220 is the anode and stores only the cathode and metal sample therein), of a cooling device to cool the cathodes (no cooling device disclosed by JP '220).

Thus for these reasons, claim 15 is held to be distinct over the teachings of JP '220 which is held to be the closest prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Claim 18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record are considered to teach, suggest or render obvious the invention of claim 18.

In particular while JP '220 teaches of a similar apparatus, JP '220 fails to teach or suggest: anodes arranged to counter the cathode (the anodic chamber is not clearly disclosed as being distinct and plural anodes), of the pretreatment chamber storing the anodes, cathodes and metal sample (the chamber of JP



Art Unit: 1745

'220 is the anode and stores only the cathode and metal sample therein), of means for cooling either the cathode or anodes (no cooling device therein).

Thus for these reasons, claim 18 is held to be distinct over the teachings of JP '220.

With respect to JP '573, this reference is drawn to plasma processing and not atomic-absorption sputtering. There is no apparent or obvious motivation for combining the apparatus of JP '573 to include a reaction chamber connected to the chamber of JP '573 for heating a sample and detecting trace elements off of the sample (as taught by JP '220).

Thus for these reasons, claim 18 is held to be distinct over the teachings of JP '573.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

Art Unit: 1745

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (703) 305-0635. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (703) 308-2383. FAX communications should be sent to the appropriate FAX number: (703) 872-9311 for After Final Responses only; (703) 872-9310 for all other responses. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gregg Cantelmo  
Patent Examiner  
Art Unit 1745

gc

May 28, 2003

STEPHEN KALAFIT  
PATENT EXAMINER  
GROUP 1700

